

REMARKS

This paper is filed in response to the Office Action mailed on April 4, 2005. Claims 1-5 stand rejected; claims 1-4 have been amended; claims 1-5 remain pending.

The Patent Office rejects claims 1-5 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 6,620,681 ("Kim") in view of U.S. Patent No. 6,326,283 ("Liang"). In response, claim 1 has been amended for clarification purposes only but Applicants respectfully submit that no *prima facie* case of obviousness has been established for claim 1 by the hypothetical combination of Kim and Liang.

Specifically, under MPEP § 2142,

"[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. "

Citing, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); see also MPEP § 2143-§ 2143.03 for decisions pertinent to each of these criteria.

No hypothetical combination of Kim and Liang teaches or suggests every element of amended claim 1. Specifically, claim 1 recites that a strip process is carried out to remove the pad nitride film and at least 50% of the buffer oxide film. Then, claim 1 recites that the remaining reduced portion of the buffer oxide film is removed using a pre-treatment cleaning process. Thus, the buffer oxide film is removed in two steps—first, by a strip process that also removes the pad nitride film and second, by a pre-treatment cleaning process. It is the partial removable of the buffer oxide film in a strip process that enables the remaining portion to be removed by the pre-treatment cleaning process and further the pre-treatment cleaning process time is shortened. More importantly, using two process to remove the buffer oxide film limits or prevents damage to the underlying first polysilicant film.

No combination of Kim and Liang teaches or suggests these features as no combination of Kim and Liang teaches or suggests the removal of a buffer oxide film in two steps. The base reference, Kim teaches removal of the buffer oxide layer pattern 106 by only a pre-cleaning step as set forth at column 8, lines 37-44.

In an attempt to supplement this deficiency of Kim, the Patent Office relies upon Liang, specifically at column 3, lines 5-10. However, Liang, at column 3, lines 5-10, teaches removal of the remaining portions of the silicon nitride layer 12 and remaining portions of the buffer oxide 11 by a stripping process, such as a wet etch using hot phosphoric acid. This passage, when taken in context with Figures 9 and 10 of Liang clearly show a one-step removal of the buffer oxide layer 11. Thus, Liang teaches only a single-step removal of the buffer oxide layer 11.

Therefore, Kim teaches removal of the buffer oxide 106 by stripping; Liang teaches removal of the buffer oxide 11 by a pre-cleaning. Neither teaches a partial removal of a buffer oxide layer in one step leaving a remaining thinner portion of a buffer oxide layer to be removed in a subsequent step. Thus, the only reasonable combination of Liang and Kim would be to substitute one step for another, still resulting in a one-step removal of the buffer oxide layer.

Accordingly, Applicants respectfully submit that no hypothetical combination of Kim and Liang teaches or suggests every element of amended claim 1 and there is no suggestion or motivation to combine Kim and Liang, and make further modifications to both references in order to arrive at the method of amended claim 1, without resorting to hind sight or using Applicants specification and claims as a template.

Accordingly, Applicants respectfully submit that no *prima facia* case of obviousness has been established and an early action indicating that claims 1-5 are allowable is earnestly solicited.

Dated: July 1, 2005

Respectfully submitted,

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